Cognitive function in ELSA wave 2

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Why cognitive function matters

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• We need to know the determinants and consequences of cognitive impairment/decline and of maintained cognitive functioning
Cognitive function measures in ELSA

**Memory**
- Self-reported memory
- Time orientation
- Word list learning: immediate and delayed recall
- Prospective remembering

**Executive/other cognitive function**
- Verbal fluency
- Visual search: speed and accuracy

**Basic skills**
- Numeracy (wave 1)
- Literacy (wave 2)
Change in self-reported memory

• One-third of total sample reported that their memory had got worse
• 38% drop in those reporting their memory as excellent
• 20% increase in those reporting their memory as poor
• Age differences were surprisingly small
Percent showing decline on memory index (>1 point) by age
How much information is retained after a short delay?

Age | % retained
---|----------
52-59 | 85.9
60-64 | 80.6
65-69 | 78.8
70-74 | 76.8
75-79 | 67
80+ | 54.3
Severe age-related prospective memory impairment
Percent forgetting to carry out action

- 52-59: 31.2%
- 60-64: 37.4%
- 65-69: 38.5%
- 70-74: 48.0%
- 75-79: 56.1%
- 80+: 63.5%
How good is the agreement between self-reported memory change and decline in test performance?
Percentage showing substantial slowing on a visual search task

![Graph showing percentage showing substantial slowing by age group and gender at Wave 2.](image)
## Literacy at ELSA wave 2

<table>
<thead>
<tr>
<th>Literacy score</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>% obtaining score</td>
<td>1.7</td>
<td>10.0</td>
<td>22.2</td>
<td>66.1</td>
</tr>
</tbody>
</table>
Sample of numeracy items

• In a sale, a shop is selling all items at half price. Before the sale, a sofa costs £300. How much will it cost in the sale? (Entry level)

• If you buy a drink for 85 pence and pay with a one pound coin, how much change should you get back? (Easiest)

• Let’s say you have £200 in a savings account. The account earns ten per cent interest each year. How much would you have in the account at the end of two years? (Hardest)
Differential patterns of literacy and numeracy impairment by gender

[Chart showing age-specific literacy and numeracy impairment for men and women.]

- Literacy impairment (purple bars)
- Numeracy impairment (pink bars)

Age groups: 52-59, 60-64, 65-69, 70-74, 75-79, 80+.
Literacy and numeracy impairment by quintiles of wealth (age adjusted)
Is retirement associated with cognitive decline?

![Bar chart showing](chart.png)

- **Memory index**
  - Retired since wave 1: [Value]
  - Working waves 1 & 2: [Value]
- **Self-reported memory**
  - Retired since wave 1: [Value]
  - Working waves 1 & 2: [Value]
- **Speed of visual search**
  - Retired since wave 1: [Value]
  - Working waves 1 & 2: [Value]
How well does mental status at wave 1 predict cognitive performance at wave 2

Decline on memory index

Slowing on search task
Conclusions

• Cognitive capability is a key factor in functioning and independence
• Even after 2 years there is evidence of age-related decline
• We will examine the factors associated with decline and maintenance of cognitive function
• Impairments on literacy and numeracy have an impact on all aspects of health, wealth and behaviour
• Trajectories of cognitive function and their underlying factors will have implications for health and social policy and for design.